Work Order ID 88044 Page 1 July-24-12 9:03:04 AM \*N900040100\* D206-667-107BL Accept Item ID: Setup Start **Revision ID:** Stop \*NS2\* Item Name: Crosstube Mid Fwd, Blue Start Qty: 1.00 **Start Date:** 7/24/12 **Cust Item ID:** Required Date: 8/24/12 Req'd Qty: 1.00 Customer: . Reference: Start Run Date: 12/07/24 Tooling: Process Plan: MLJ Approvals: Date: Stop Date: SPC (Y/N): Date: Sequence ID/ Operation Reject Reject Set Up/ **Tool ID** Tool # Plan Accept Insp. Work Center ID Description Number Stamp Run Hours Code Qty Qty Draw Nbr **Revision Nbr** D206-667-147 A (DEO) DSI9565 Α IIN-D206-667 D 100 0.00 OF MUJ 12-8-14 DOCUMENT CONTROL \*100\* .DC 0.00 Memo Photocopy bluefile and create labels as per PPP D206-667-107 Ch 20 **Document Control** 

110 \*110\* Pick Kit

0.00

Packaging

Packaging Packaging

Memo

0.00

En 12-8-2

NCR:	Yes	1	No
IVUN.	162	1	INC

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA:	1	Date:		· ·	
			. ***		,

	,								QA Closed:	Date:		
Work Orde	r.				DISPOSITION			AGAINST DE	PARTMENT	/PROCESS		
WOIK OIGE	•				Rework	i	Skid-tube	Crosstube	]	Water Jet	Engineering	
Part N	0.				Scrap	1	Machining	Small Fab	Pro	d. Eng. Coor.	Quality	
					Use-as-is	<sub>The</sub>	Thermoforming Finishing			Rec/Store/Packaging		
NCR N	0.	,			Work Order Update	1	Large Fab Composite			Supplier		
					2				- '	·		
Root				Descr	iption of work order update	Initial	А	ction	Sign &			
Cause	. Date	Step	Qty		or Non-conformance "	Chief Er	g Des	cription	Date	Verification	QC Inspector	
oc/Data	_	ļ										
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perator								•				
Material	_				•							
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Other	_											
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Supplier												
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Inapproved		<u> </u>			`					<u> </u>	· · ·	
				*		AULT CAT	regory	<del></del>				
Landin	ng Gear			· ·	General				7	<del></del>	7	
1	Bending				Bend	Grain			Ovalized	ļ	Pressure/Forced	
	Centre N	ot Conce	ntric to (	o/s	BOM/Route	Hard	· ·		Over/Under	<b> </b>	Temperature/Cure	
ļ	Cracks*			_	Broken/Damaged	<b>—</b>	ction Incomplete		Part Incorre		Weld	
1	Crushed/	Crimped.		<u> </u>	Burrs	<b></b>	ictions Incomplete	e/Unclear	Part Lost/M	<u> </u>	Wrong Stock Pulled	
ļ	Cuffs			$\vdash$	Contamination	<b>-</b>	itenance		Part Moved			
1	Heat Trea			$\vdash$	Countersink	Misla	" "		Positioned '		7	
1	Inspectio		Tube	·  _	Cut Too Short •	Misre		<u> </u>	Power Loss,	/Surge	Other .	
ļ	Ripples ir			<u> </u>	Drill Holes	Offse						
1	Torque V			י Ĺ	Drawing .	<b>⊢</b>	of Calibration		*		· · · · · · · · · · · · · · · · · · ·	
1	Turning S	Sequence		1	Finish	Out o	of Sequence	í				

Outside Dimensions ::,,,

Wave/Twist in Tube

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

July-27-12 3.0.	J. UT AIVI									
Item ID: D206-667-107E Revision ID:		107BL		Accept	*N900	)* s	Setup Star	¹ *N	S1*	
Item Name:	Crosstube N	Mid Fwd, Blue						Stop	· *N	S2*
Start Date:	7/24/12	Start Qty: 1.00	*1*		Cust Item I	D:	•			-,
Required Date:	8/24/12	Req'd Qty: 1.00	*1*		Customer:				٠.	
Reference:	ø.		•			•				
Approvals:	Process P	Plan:	Date:	Tooling:	Da	ite:	F	Run Star	I <i>Z</i> I	R1*
	QC:		Date:	SPC (Y/N): _	Da	ite:		Stop	, *N	R2*
Sequence ID/ Work Center ID		Operation Description	-	Set Up/ Run Hours	Tool ID	Tool # Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120				0.00		Mο				•
*120*		BENDING MACHINE	- CROSSTUBES				12/	8/7		
CNC Bend 2		Memo		0.00						7 -
CNC Alpha 160 Be	ender	Bend tube a	s per Dwg D206-667-147	using CNC bender program						tho?
130		QC15- Crosstube Dimer	nsional Check	0.00						
*130*		QC15 Clossidoc Dimer	isional Check	<b>NO</b> AS	\ .   -					•
QC Ouality Control		Memo		0.00	7108107					

NCR:	Yes	/(No	۰
		\ /	,

# WORK ORDER NON-CONFORMANCE / UPDATE

DQA	bh	Date:	2/02/17	
OA Closed	Ilan		12/18	•

								Qri closed:	POD Bate.	17001200.			
Work Order: 88044				,	DISPOSITION		AGAINST DEPARTMENT/PROCESS						
Part No.	<u>D206</u> 12-1	-66	1-10		Use-as-is Thermoforming Finishing Work Order Update Large Fab Composite			Fab Pro	Water Jet Engineering Prod. Eng. Coor. Quality Rec/Store/Packaging Other Supplier				
Root				1	ption of work order update	Initial	Action	Sign &					
Cause	Date	Step	Qty	(	or Non-conformance	Chief Eng		Date	Verification	QC Inspector			
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved	72/08/07	120	H	twe I	has height bent toll	Melis	Acceptable As Per DA.  Employed Aug 317. 2012.  (se Attacko).  TR.M "Sine B" cuff  0.100" + 000" per  Employed  Employed	TW 12-8-8	MO 12/8/8	17 06 lo7			
					F/	AULT CATE	GORY						
Landing	Gear				General	37			*·	_			
<u> </u>	Bending Centre No Cracks			o/s	Bend BOM/Route Broken/Damaged	<b>—</b>	ion Incomplete	Ovalized Over/Under	ect	Pressure/Forced Temperature/Cure Weld			
-	Crushed/	Crimped		<u> </u>	Burrs	_	tions Incomplete/Unclear	Part Lost/M	· ·	Wrong Stock Pulled			
-	Cuffs				Contamination	$\boldsymbol{\vdash}$	enance	Part Moved					
<del> </del>	Heat Trea		Tubo	-	Countersink	Mislab		Positioned 1		Joshan			
-	Inspection Ripples in		rupe		Cut Too Short Drill Holes	Misrea Offset	u	Power Loss	rourge	Other			
-	<b>⊣</b> ''		Evtrucio	_	Drawing	H	Calibration			•			
Torque Waves in Extrusion Turning Sequence			Finish	Out of Calibration Out of Sequence		1							
-	Wave/Tw	-		<b> </b>	Folio	<b>⊢</b> ⊣.	sequence • Dimensions						

## **Eric Downing**

From:

David Shepherd <dshepherd@dartaero.com>

Sent:

Tuesday, August 07, 2012 12:19 PM

To:

'Eric Downing'; 'Alex Pharand'

Cc:

'Mike Petsche'; psmith@dartaero.com

Subject:

RE: D206-667-107BL

Yes ... This tube is acceptable.

The saddle holes need to be drilled so that the tube will sit level on the aircraft.

It would be acceptable to remove 0.100" from the 18.650" side and shift the supports slightly.

David

From: Eric Downing [mailto:edowning@dartaero.com]

**Sent:** August-07-12 9:26 AM

To: Alex Pharand; David Shepherd

**Cc:** 'Mike Petsche'; psmith@dartaero.com **Subject:** D206-667-107BL\*

Good morning David/Alex

I have a D206-667-107BL B#88044 with a height on one side measuring 18.650" should be MAX 18.600". Tube is slightly over bent on the height but within tolerance on the spans as you can see on the dimension sheet that's attached.

Is this acceptable?

**Thanks** 

Eric Downing
QC Corrdinator
Dart Aerospace LTD



# Work Order ID 88044 July-24-12 9:03:04 AM

\*88044\*

Page 3

uty-2,7-12 7.0.												
tem ID: Revision ID: tem Name:	D206-667-	107BL lid Fwd, Blue			Accept	*N90	<b>0040</b>	100	)*	Setup Star	I VI	S1** S2*
Start Date: Required Date	7/24/12	Start Qt Req'd Q	y: 1.00	*1 *1		Cust Iter						. 7/
Reference:	. 0/2 II 12	ruq u Q		·** "]	•		ā1 <b>.</b>				~	• **
Approvals:	Process P	lan:		Date:	Tooling:		Date:		. ]	Run Star	1/1	R1*
	QC:			Date:	SPC (Y/N):		Date:			Sto	" *N	R2*
Sequence ID/ Work Center I	D	Operatio Descripti			Set Up/ Run Hours	Tool II	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
*140 *140* Crosstubes	·	Crosstubes	Memo		0.00				Km	M	Z-8-	9
Crosstubes	*		1-Drill holes	& ream using dril II (3) top holes.	1 Jig DT8541 & DT8542 as po	er Dwg D206-667-		•	,			
	•			and switch drilling J holes using "T" pins	igs from right to left, left to rig	ht. Locate Jigs		, .				•
				holes using drill Jig	DT8541 & DT8542 as per D	wg D206-667-						
• • •	•		5-Drill pilot	holes as per Dwg D	206-667-147.Drill only the top	(2) holes.	*	Man :				
•				rivet holes using dr ide has 3x top holes	ill Jig DT8787 fwd as per Dwg	D206-667-147.	· / *		•			•
			7-Drill Aft r	ivet holes using dril	I Jig DT8787 fwd as per Dwg	D206-667-147.						•
			8-C'sink hol compensate		5-667-147. Allow rivet to sit b	elow surface to		·				
				rt # and batch # usin	ng vibrating stylus as per Dwg n outside of tube)	D206-667-147				<b>\$</b> 00		
				spect for surface da	ES WHEN HANDLING CRO mage. Repair damage within l		TW			12-	8-9	-

										DQA:	Date:		
NCR:	es / No				WORK ORDER NON	-CO	NFORM	MANCE / UP	DATE	QA Closed:	Date:	•	
					1					QA Ciosea.	Date.		
Work Orde	ar.				DISPOSITION	i			AGAINST DI	EPARTMENT,	/PROCESS		
Part N	No	·			Scrap Machining Small Fa			Crosstube Small Fab Finishing Composite	Prod. Eng. Coor. Qua g Rec/Store/Packaging Of e Supplier				
Root				Descri	ption of work order update	$\Box$	Initial	Ac	tion	Sign &			
Cause	Date	Step	Qty		or Non-conformance	Ct	nief Eng	Desc	ription	Date	Verification	QC Inspector	
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved													
						FAUI	LT CATE	GORY					
Landi	ng Gear	σ		_	General Bend	Г	Grain			Ovalized		Pressure/Forced	
Bending Bend Centre Not Concentric to O/S BOM/Route						-	Hardwa	re	-	Over/Under	tolerance	Temperature/Cure	
	Cracks Broken/Damaged						Inspecti	on Incomplete		Part Incorre	ct	Weld	
	Crushed/Crimped Burrs						Instruct	ions Incomplete/	'Unclear	Part Lost/M	issing	Wrong Stock Pulled	
	Cuffs				Contamination		Maintenance Pa					_	
	Heat Treat Countersink					<b>⊢</b>			Positioned Wrong				
	Inspection Strip in Tube Cut Too Short											Other	

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

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Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

Drill Holes

Drawing

Finish

Outsource process - NDT

July-24-12 9:03:04 AM				00044						7 457			
Item ID: Revision ID:	D206-667-10	7BL		Accept	•	*N900	<b>040</b>	100	)* s	etup Start	1.7	S1*	
Item Name:	Crosstube Mid	Fwd, Blue								Stop	*N.	S2*	
Start Date:	7/24/12	Start Qty: 1.00	**	1*		Cust Item I	D:						
Required Date:	: 8/24/12	Req'd Qty: 1.00	*•	1*		Customer:							
Reference:								<del></del>	•	S40 m			
Approvals:	Process Pla	n:	Date:	Tooling	:	Da	ate:		F	tun Star	171	R1*	
QC:			Date:	SPC (Y	/N):	Date:				Stop	*N	R2*	
		Operation Description		Set U Run	Jp/ Hours	Tool ID	Tool#	# Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp	
*160 *160*		QC5- Inspect part co	mpleteness to step on	n W/O 0.00 0.00	0AS 16	nlowlu				,			-
Quality Control		*** WE	AR LATEX GLOVE	S WHEN HANDLING	CROSSTUBE*	***							
170				0.00									
*170* HandFXtube Hand Finishing Cro	osstubes	Memo *** WE	AR LATEX GLOVE	0.00 S WHEN HANDLING	· CROSSTUBE	***	•		(1x)	) M	3/2-	08-1	<u>'</u> 9
, moning on			AN CROSSTUBE W							.*·			
180		Outsource process -	NDT per QS1038 4.1	0.00					al				
*180* Outsource2		Memo		0.00					(2	12/05	8//3 (		

Liquid Penetrant Inspection as per QSI 0380r Issue P/O: 1264 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order

\*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\*

												DQA:	Date	e: <u> </u>	
NCR:	Yes	/ No				V	WORK ORDER NON-CONFORMANCE / UPDATE						,	•	
												QA Closed:	Date	2:	
Work Ord	er.						DISPOSITION				AGAINST DI	PARTMENT	PROCESS	,	
VOIN OIL							Rework			Skid-tube	Crosstube	7	Water Jet	Engineering	
Part	No.					İ	Scrap	١		Machining	Small Fab	-	d. Eng. Coor.	Quality	
NCR	No.						Use-as-is Work Order Update		1	noforming Large Fab	Finishing Composite	Rec/Stor	e/Packaging Supplier	Other	
Root					Descr	iptio	n of work order update	١	Initial Action		tion	Sign &	<del>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</del>		
Cause		Date	Step	Qty		or N	on-conformance	Ch	Chief Eng Description Date Verification QC Insp						
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Land	ina (	Geor	•				General	AUL.	CATE	JUNT					
Luita		Bending			Γ	Bei			Grain		Г	Ovalized	Γ	Pressure/Forced	
		Centre No	ot Concer	ntric to	o/s		M/Route		Hardwa	re		Over/Under	tolerance	Temperature/Cure	
		Cracks				_	oken/Damaged		Inspecti	on incomplete		Part Incorred	:t T	Weld	
		Crushed/0	Crimped.	e.		Bur	rs		Instruct	ions Incomplete/	Unclear	Part Lost/Mi	ssing	Wrong Stock Pulled	
		Cuffs				Cor	ntamination		Mainte	nance		Part Moved	_		
	Ŀ	Heat Trea	t			Co	untersink		Mislabe	led		Positioned V	Vrong _		
	Inspection Strip in Tube Cut Too Short					: Too Short		Misread	I		Power Loss/	Surge	Other		
	Ripples in Bend Drill Holes					ll Holes		Offset							
	Torque Waves in Extrusion Drawing					awing	Out of Calibration								
Turning Sequence Finish						Out of Sequence									
Wave/Twist in Tube Folio						io		Outside	Dimensions						

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Work Order ID 88044  July-24-12 9:03:04 AM					,		Page 5					
Item ID: Revision ID:	D206-667-1	07BL		Accept	*N900	<b>040</b>	100	)* s	etup Sta	1 1	IS1*	
Item Name:	Crosstube M	id Fwd, Blue							50	<sub>ob</sub> */	IS2*	
Start Date:	7/24/12	Start Qty: 1.00	*1*		Cust Item I	D:						
Required Date:	Required Date: 8/24/12 Req'd Qty: 1.00		*1*		<b>Customer:</b>							
Reference:  Approvals: Process Plan:  QC:						<del>-</del>	n	C4.				
		an:	Date:	Tooling:	Da	Date:				art *N	IR1*	
				SPC (Y/N):	/N): Date:				St	<sup>op</sup> *⋀	IR2*	
Sequence ID/ Work Center ID	)	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. r Stamp	_
190		Packaging		0.00				1.1	ţ		$\leq 0$	
*190* Packaging		Memo		0.00				17			<del></del>	
Packaging			LATEX GLOVES WH	EN HANDLING CROSST	UBE***						2.,,	′
		Ensure copy	of NDT results attache	d to work order.							10	
200		QC5- Inspect part compl	eteness to step on W/O	0.00	.0							
*200*				(16	1 -1 -1 -2						· · ·	
QC Quality Control		Memo *** WEAR	LATEY GLOVES WH	0.00 🔪 🕰 EN HANDLING CROSST	17 (06) 13							
Quanty Condoi		WLAK	LATEX GLOVES WIT	EN TIMADEINO CROSSI	· ·							
203				0.00								
*203*												
HandFXtube Memo				0.00				SAn		12-08	-10	
Hand Finishing Crosstubes *** WEAR LATEX GLOVES V				WHEN HANDLING CROSSTUBE***				ONLY	•		• -	
				WASH CROSSTUBE AND THEN USE WASH'N WIPE TO STUBE BEFORE CHEMICAL CONVERSION								

									•		DQA:	Date:	
NCR:	es ,	/ No		-		WORK ORDER NON-C	1O:	NFORM	MANCE / UPDATE		QA Closed:	Date:	•
				. ,		DISPOSITION	П		AGAIN	ST DE	PARTMENT		· · · · · · · · · · · · · · · · · · ·
Work Orde	er:				<u> </u>				Adam				<u> </u>
Part I	۱o. <u></u>					Rework Scrap Use-as-is		ı	Skid-tube Crosstul Machining Small Finishi	ab	1	Water Jet d. Eng. Coor. re/Packaging	Engineering Quality Other
NCR 1	No			• • • •	<del></del>	Work Order Update			Large Fab Composi	~	Nec/3tor	Supplier	Other
Root					Descri	ption of work order update		nitial	Action		Sign &		
Cause		Date	Step	Qty		or Non-conformance	Ch	ief Eng	Description		Date	Verification	QC Inspector
Doc/Data													
Equip/Tooling													
Operator													
Material													
Setup													
Other													
Process													
Supplier											]		
Training													
Unapproved													
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Landi	ng Ge	ar				General		3.3	•		,		,
	В	ending				Bend	$\sqcup$	Grain			Ovalized		Pressure/Forced
	∐c	entre No	t Concer	ntric to	o/s	BOM/Route	Ш	Hardwa	re		Over/Under	tolerance	Temperature/Cure
	L c	racks				Broken/Damaged		Inspecti	on Incomplete		Part Incorred	ct	Weld
	c	rushed/0	Crimped.			Burrs		Instruct	ions Incomplete/Unclear		Part Lost/Mi	ssing	Wrong Stock Pulled

Maintenance

Out of Calibration

Out of Sequence

Outside Dimensions

Mislabeled

Misread

Offset

Part Moved

Positioned Wrong

Power Loss/Surge

Other

Contamination

Countersink

Cut Too Short

Drill Holes

Drawing

Finish

Folio

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Cuffs

**Heat Treat** 

Inspection Strip in Tube

Torque Waves in Extrusion

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										DQA:	Date	:·
NCR: Y	es / No				WORK ORDER NON-	COL	NFORM	MANCE / UP	DATE	•	···	•
	<del> </del>									QA Closed:	Date	:
Work Orde	r:				DISPOSITION				AGAINST DE	PARTMENT	PROCESS	,
Part N					Rework Scrap Use-as-is		ı	Skid-tube Machining noforming	Crosstube Small Fab Finishing	4	Water Jet d. Eng. Coor. e/Packaging	Engineering Quality Other
NCR N	o			······································	Work Order Update			Large Fab	Composite	]	Supplier	
Root				Descri	ption of work order update		nitial	Ac	tion	Sign &		
Cause	Date	Step	Qty	1	or Non-conformance	Ch	ief Eng	Desc	ription	Date	Verification	QC Inspector
Doc/Data Equip/Tooling Operator							:					
Material				4					•			
Setup												
Other						1	•					
Process												
Supplier												
Training												
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					F	AUL	T CATE	GORY				
Landir	g Gear				General				<del></del>	-	_	,
	Bending				Bend		Grain			Ovalized	L	Pressure/Forced
	Centre No	ot Concer	ntric to (	D/S	BOM/Route		Hardwa	re		Over/Under	tolerance	Temperature/Cure
	Cracks				Broken/Damaged		Inspecti	on Incomplete		Part Incorred	it	Weld
	Crushed/	Crimped.			Burrs		Instruct	ions Incomplete/	'Unclear	Part Lost/Mi	ssing	Wrong Stock Pulled
	Cuffs				Contamination		Mainte	nance		Part Moved		
	Heat Trea	at		L	Countersink	L	Mislabe	led		Positioned V	Vrong	<u> </u>
	Inspectio	n Strip in	Tube		Cut Too Short		Misread	i		Power Loss/	Surge	Other ′
[	Ripples in	n Bend			Drill Holes		Offset					
	Torque W	Vaves in E	xtrusion	ı [	] Drawing		Out of (	Calibration				
ſ	Turning S	equence			Finish		Out of S	Sequence				
	Wave/Tw	ist in Tub	e		Folio	$\Box$	Outside	Dimensions				

4-Install nut plates as per Dwg D206-667-147. Touch-up rivet heads with Imron

paint.

											DQA:	Date:	
NCR: Y	⁄es	/ No				WORK ORDER NON-C	CONF	ORN	MANCE / UPDATE		OA Classal	D.4.	
						<del> </del>	<u> </u>				QA Closed:	Date:	
Work Orde	٥r٠					DISPOSITION			AGAINS	T DE	PARTMENT	/PROCESS	
Part N	_				· · · · · · · · · · · · · · · · · · ·	Rework Scrap			Skid-tube Crosstub	-	Pro	Water Jet d. Eng. Coor.	Engineering Quality
NCR N	- No					Use-as-is Work Order Update	]   T		oforming Finishin Large Fab Composit	-	Rec/Sto	re/Packaging Supplier	Other
Root					Descri	ption of work order update	Initi	ial	Action		Sign &		
Cause		Date	Step	Qty	(	or Non-conformance	Chief	Eng	Description		Date	Verification	QC Inspector
Doc/Data													
Equip/Tooling													
Operator								1					
Material													
Setup													
Other													
Process								1					
Supplier				·					*·	•			
Training													
Unapproved		!											
•		•				F	AULT C	ATEC	ORY				
Landi	ng G	ear ´				- General					_		_
		Bending				Bend	Gr	ain		L	Ovalized		Pressure/Forced
		Centre No	t Concer	ntric to C	o/s	BOM/Route	Hai	rdwar	e		Over/Under	tolerance	Temperature/Cure
		Cracks				Broken/Damaged	Ins	pection	on Incomplete		Part Incorre	ct	Weld
		Crushed/0	Crimped.			Burrs	Ins	tructi	ons Incomplete/Unclear		Part Lost/Mi	issing	Wrong Stock Pulled
		Cuffs				Contamination	Ма	ainte	nance	Г	Part Moved		<del>-</del>
Ì	  -	Heat Trea	t			Countersink	∏мi:	slabel	ed		Positioned V	Vrong	
ľ		nspection	Strin in	Tuhe		Cut Too Short	Пмі	sread		1	1 Power Loss/	Surge [	Other

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

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Ripples in Bend

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drill Holes

Drawing

Finish

## **Picklist Print**

July-24-12 9:03:03 AM

Work Order ID:

88044

Parent Item:

D206-667-107BL

Parent Item Name:

Crosstube Mid Fwd, Blue

**Start Date: 7/24/12** 

Required Date: 8/24/12

Page 1

Start Qty: 1.00

Required Qty: 1.00

Comments:

revA 11.01.13 New Issue EC verified by:DD 615 DD VFRF-FC

	615 DD VERF:EC												
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty ou Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN5-30A		Purchased	No	2000		250	Each	145.0000	4	4 ,	4)	Sa Sa	Ρ.
SBOLT				B822	n								
				Location		Loc Oty	Lo	c Code	-		XAA	12.	8-2
				ST337		50							
•					2416	50			· ·	<del></del>			
				ST339		95							
					7514	7							
					)910   259 .	8			<del>- Q</del>				
/				122	1259 2141	50							
AN5-32A Bolt		Purchased	No			250	Each	319.0000	4 (	1 4	2 1551Waxaaraa	(§	<b>P</b>
				<b>Location</b>		Loc Qty	Lo	oc Code					
				ST337		50							
				122	2416	50							_
				ST339		169							
					9862	2							
					0423	67			<u> </u>				
					2151	100							
				ST346	1541	100 100							
/ ABIE 51A		<b>.</b>	No	121	1341	250	Each	2,556.0000	10	10/	$\wedge$	C	<b>⊃</b> n
AN5-7A		Purchased	No			230	Lacii	2,330.0000	10	اللألدا	13/5/	13	*
Bolt		*						6.1		(0,0),	1		
				Location		Loc Oty		oc Code					
				ST337	0015	2556			-/	<u>v                                    </u>			
				119	9017	2556			, ,				

IPP REV:B 11.08.08 PER ECN 11-

										DQA:	Date:	
NCR:	Yes	/ No				WORK ORDER NON-C	ON	FORM	MANCE / UPDATE			
	_									QA Closed:	Date:	
Work Ord	۰.۰					DISPOSITION	ı		AGAINST D	EPARTMENT,	/PROCESS	
WORK OTU	ei. -					Rework	1		Skid-tube Crosstube	7	Water Jet	Engineering
Part	No.					Scrap			Machining Small Fab	Pro	d. Eng. Coor.	Quality
	•			<del></del>		Use-as-is			noforming Finishing	-	re/Packaging	Other
NCR I	No.					Work Order Update			Large Fab Composite		Supplier	
Root	٩					ption of work order update	ļ	itial	Action	Sign &	_	
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Misread

Out of Calibration

Out of Sequence
Outside Dimensions

Offset

Power Loss/Surge

Other

Ripples in Bend

Turning Sequence

Wave/Twist in Tube

Inspection Strip in Tube

Torque Waves in Extrusion

Cut Too Short

Drill Holes

Drawing

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

· July-24-12 9:03:03 AM

Work Order ID:	88044									
Parent Item:	D206-667-107BL							Date: 7/24/12		Required Date: 8/24/12
Parent Item Name:	Crosstube Mid Fwd	l, Blue					Start	<b>Qty:</b> 1.00		Required Qty: 1.00
AN960JD516 Washer	NAS1149D0563J	Purchased	No		250	Each	12.0000	18	18	M1212555 1
				<b>Location</b>	Loc Qty		Loc Code			
O				ST338	12					
				2612	12					/ /
AN970-4 Washer		Purchased	No	200	250	Each	193.0000	12	12	\$ 80
				Location	Loc Oty		Loc Code			
				ST344	193					The state and the state of the
				104885	4					, -
				105442	1					
				107242	2					
				10771	1				-	
				115936 120644	10 30			6	,——	
				121285	145			<del>'∕⊘ '</del> ×		
D206-667-147TRN		Manufactured	No		110	Each	2.0000	1	1	
Crosstube Assembly, M	id Fwd	TVI allu I actui cu		•				<del> </del>		TW 12-8-7
				<b>Location</b>	Loc Qty		Loc Code			700 12-03 T
•				LG	-1					
				LG003	3			d		
				82211	1					
				82212	1					
D2873-043 Nut Plate Assembly		Manufactured	No		230	Each	80.0000	2	2	A8 12-8-12
				Location	Loc Qty		Loc Code			
				LG052	80					
				72644	2					
				82949	38			_(2)		
				84386	40					

											DQA.	Date.	4.
NCR:	Yes	/ No				WORK ORDER NON-C	O	<b>VFORM</b>	MANCE / UPDATE			_	. •
								1			QA Closed:	Date:	· · · · · · · · · · · · · · · · · · ·
Work Ord	or.					DISPOSITION			AG	AINST DE	PARTMENT	PROCESS	
Part i						Rework Scrap			<b>}</b>	sstube all Fab	Pro	Water Jet d. Eng. Coor.	Engineering Quality
NCR I	Vo.					Use-as-is Work Order Update			- <del></del>	nishing posite	Rec/Stor	e/Packaging Supplier	Other
Root					Descri	ption of work order update	1	nitial	Action	<del> </del>	Sign &		
Cause		Date	Step	Qty		or Non-conformance	Ch	ief Eng	Description		Date	Verification	QC Inspector
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	-	Crushed/0	Crimped.			Burrs		1	ions Incomplete/Unclear	_	Part Lost/M	issing	Wrong Stock Pulled
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1		Inspection	n Strip in	Tube	l	Cut Too Short		Misread	•	l	Power Loss/	Surge	Other

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

Drill Holes

Drawing

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

· July-24-12 9:03:03 AM

Work Order ID: Parent Item:	88044 D206-667-107BL						Start l	Date: 7/24/12	Required Date: 8/24/1	2
Parent Item Name:	Crosstube Mid Fwd,	Blue					Start	<b>Qty:</b> 1.00	Required Qty: 1.00	
D2873-045 Nut Plate Assembly		Manufactured	No		230	Each	33.0000	2	2 Al 12-8-1	2
				Location	Loc Qty		Loc Code			
•				LG052	33					
				82947	33			(2)	<del></del>	
<b>D2891-1</b> 2.25 Support		Manufactured	No		230	Each	33.0000	2	2 Ae 12,8	.12
				<b>Location</b>	Loc Qty		Loc Code			
				LG051	20					•
				(84164) /2	20					
				LG052	13					
				72822 75176	1					
				82277	11				e de la compansa de l	
D3595-063-395 RUBBER CUSHION		Manufactured	No		230	Each	38.0000	4	4 Al 12-8-1	12
cut (4)0.063" X 3.95"				Location	Loc Qty		Loc Code			
				LG051	38			_	•	
•				(82223)	38			(9)		
MS20601-AD4W8 RIVET		Purchased	No		230	Each	344.0000	14	14 Al 12-8-12	
				Location	Loc Qty		Loc Code,			
				311	100					
				122452	100			(14)		
				LG051	33					
				121017	33					
				ST314	200					
				121827 122141	100 100					
				ST322	110					
				121255	11					
	•			121233						

NCR:	Yes	/	Nο

Date:

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										QA Closed:	Date	
Work Orde	··	-			DISPOSITION				AGAINST DI	EPARTMENT,	/PROCESS	
VVOIR OIUC	•				Rework	7		Skid-tube	Crosstube		Water Jet	Engineering
Part N	0.				Scrap	1 I		Machining	Small Fab	Pro	d. Eng. Coor.	Quality
					Use-as-is	]   1	Therm	oforming	Finishing	Rec/Stoi	e/Packaging	Other
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Root			<u> </u>	Descri	ption of work order update	Init	tial	Ac	tion	Sign &		
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	Centre No	ot Conce	ntric to	U/S	BOM/Route	$\vdash$	ardwa		<u> </u>	Over/Under	<u>-</u>	Temperature/Cure
-	Cracks	C.: !			Broken/Damaged		•	on Incomplete	/lindon	Part Incorre		Weld
-	Crushed/	Crimped.	•	<u> </u>	Burrs	$\vdash$		ions Incomplete	Unclear	Part Lost/M		Wrong Stock Pulled
-	Cuffs				Contamination	$\vdash$		nance	}-	Part Moved		
-	Heat Trea		<b>T</b> 1.		Countersink	-	lislabe		}-	Positioned \		Other
}	Inspectio		rube	<u> </u>	Cut Too Short	-	lisread ffset	1	. L	Power Loss,	Surge	Joulet
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-	Torque W			n	Drawing	<b>├</b>		Calibration Seguence				
-	Turning S	•			Finish			Dimensions		· · · · · · · · ·		
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July-24-12 9:03:04 AM

July 21 12 3.00.01											
Work Order ID:	88044 D206-667-107BL								ate: 7/24/12		Required Date: 8/24/12
Parent Item Name:	Crosstube Mid Fwd,	, Blue						Start (	Qty: 1.00		Required Qty: 1.00
MS21042L5 Nut		Purchased	No			250	Each	2,020.0000	4 5	4	· Of
<b>&gt;</b>				Location	<u>1</u>	Loc Qty		Loc Code			·
				300		500					
					121652	500					
				314		1000					
				011	122452	1000			-		
				ST300		520					
				51500	108827	4				_	
					116105	5					•
•					116548	43				_	
					119109	456			V		
					17651	4					
					2937	8				_	
MS21920-20 Clamp (per MIL-DTL-87	83C)	Purchased	No			230	Each	119.0000	4	4	Al 12-8-12
				<b>Locatio</b>	<u>n</u>	Loc Qty		Loc Code			
				LG050		119					
					116799	8					
					120676	8					
					121067	2					•
					121274	26					
	•				122254	75			<u> (4)</u>		

NCR: Yes /
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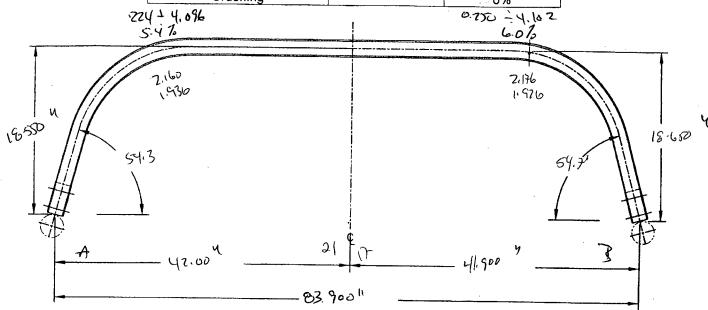
Date:

NCR: Y	·										
									QA Closed:	Date:	
Work Orde	r:				DISPOSITION			AGAINST DE	PARTMENT	/PROCESS	
., .,					Rework	7	Skid-tube	Crosstube		Water Jet	Engineering
Part N	o. ,				Scrap	1 1	Machining	Small Fab	Pro	d. Eng. Coor.	Quality
					Use-as-is	The	ermoforming	Finishing	Rec/Stor	re/Packaging	Other
NCR N	0.				Work Order Update	rk Order Update Large Fab Composite			Supplier		
Root		T		Descr	ription of work order update	Initia	A	ction	Sign &		
Cause	Date	Step	Qty		or Non-conformance	Chief E		cription	Date	Verification	QC Inspector
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}	Cracks			-	Broken/Damaged	<b>—</b>	ection Incomplete		Part Incorre	<del>-</del>	Weld
-	Crushed/	Crimped.		-	Burrs	<b>—</b>	uctions Incomplete	e/Unclear	Part Lost/M		Wrong Stock Pulled
ŀ	Cuffs				Contamination	$\vdash$	ntenance	-	Part Moved		
ļ	Heat Trea		T L		Countersink	$\vdash$	abeled	<b> -</b> -	Positioned \		Other
}	Inspectio	•	rupe	-	Cut Too Short	Misr			Power Loss/	ourge	Tottlet
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}	Torque W			" ├	Drawing Finish	<b>—</b>	of Sequence				
}	Wave/Tw	•		$\vdash$	Folio	<del></del>	ide Dimensions				
	wave/ IW	nacin i ul	<b>,</b>	1	ן טווט	1 Jours	MAC DITTICHSIONS			<u>, '</u>	

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DART AEROSPACE LTD	Work Order:	88044
Description: Crosstube Mid Fwd (206L)	Part Number:	D206-667-107
Inspection Dwg: D206-667-147 Rev: A		Page 1 of 1

Required Dimension	Min	Max
Height	18.34	18.60
1/2 Span	41.79	42.05
Angle	54°	56°
Total Span	83.59	84.09
Bending Passes	10	
Crushing		6%



	Side A	Side B
Bending Passes	<b>ର</b> ।	17
Crushing	5,4%	60%
	Comments	
* See Ph	in Page # 2,	<del></del>

		_		
- <b>6-1</b> 0-7	1		}	
16	17/	081	102	
	OAS)	04S	17/08/	17/08/07

Rev	Date	Change	Revised by	Approved
Α	12.02.15	New Issue	KJ ,	* Ppiotou
В	12.04.16	Added bending, crushing dimensions	KJ KJ	M
			17)	<u> </u>

Item	Qty -147	Part Number	Description
1	X	D206-667-147	CROSSTUBE ASSEMBLY (206L MID FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC, 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

#### **GENERAL NOTES:**

1) MATERIAL: MANUFACTURED FROM D6002-115

FINISHED LENGTH = 99.84±0.020

2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2 PAINT OUTSIDE PER DART QSI 005 4.2

- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.

- IOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
  UNITS: INCHES UNLESS OTHERWISE NOTED.
  BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
  IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-147" AND BATCH NUMBER ON INSIDE OF CUFF PER DART QSI 044 6.4 (VIBRATING STYLUS).

- 10 IDENTIFICATION.

  10 IDENTIFICATION.

  11 IDENTIFICATION.

  12 INSIDE OF CUFF PER DART QSI 044 6.4 (VIBRATING STYLUS).

  12 INSIDE OF CUFF PER DART QSI 044 6.4 (VIBRATING STYLUS).

  13 PART IS SYMMETRIC ABOUT CENTERLINE.

  14 PART IS SYMMETRIC ABOUT CENTERLINE.

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  16 PART IS SYMMETRIC ABOUT CENTERLINE.

  17 PART IS SYMMETRIC ABOUT CENTERLINE.

  18 PART IS SYMMETRIC ABOUT CHARLES.

  19 PART IS SYMMETRIC PART OF 14) EATREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE.
  OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
  SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
  LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

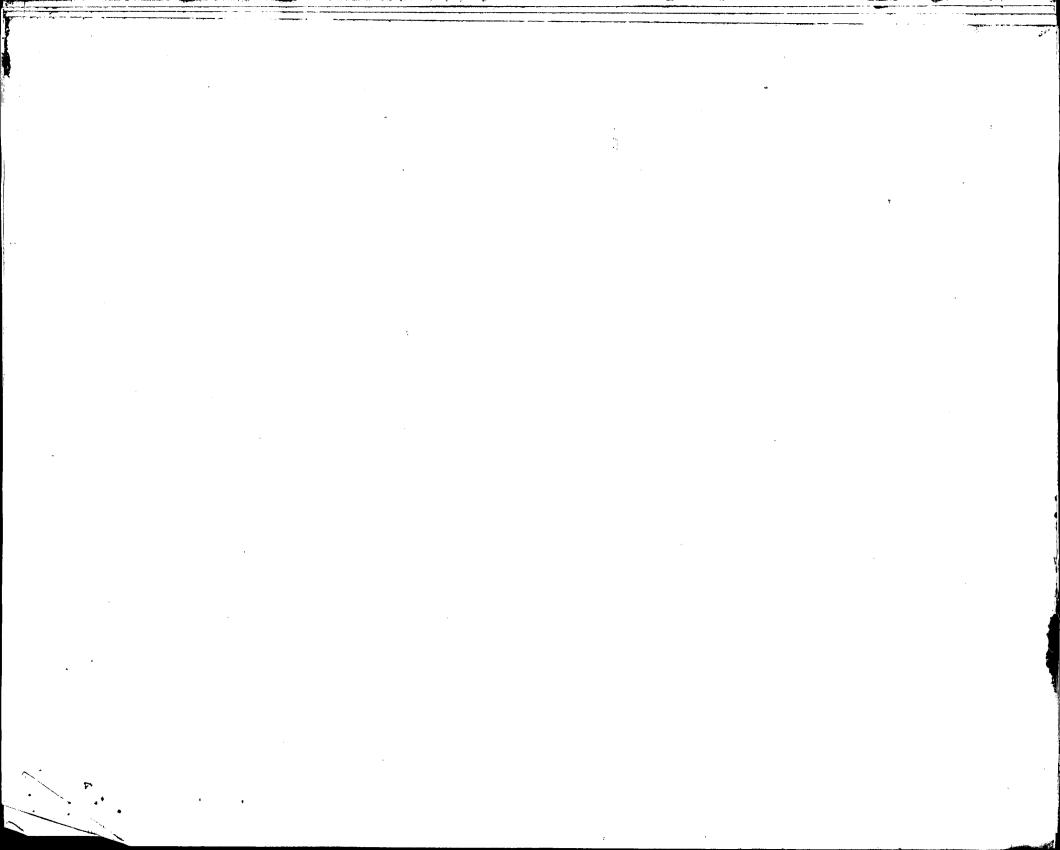
  15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
  SAFETY AND THAT AND THAT HOLD HOT BOTH THE TOP TOPOLING.
- SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY RETURN TO **ENGINEERING** UNCONTROLLED COPY SUBJECT TO AMENDMENT WITHOUT NOTICE WORK ORDER MLJ 12/07/24

DEO ATTACHED

EW #11-65 11.07.28 UNDER REVIEW

Α	NEW	NEW ISSUE			10.11.23
REV.		DESCRIPTION			DATE
DESIGN DRAWN		90	DART AERO		
CHECKE MFG. AF		Œ.	DRAWING NO. D206-667-147		REV. A SHEET 1 OF 4
APPROV		1	TITLE CROSSTUBE ASSY (	206L MID FV	SCALE VD) NTS
DATE 10.12.23			COPYRIGHT © 2010 BY DART AEROSPACE LTD  THIS CODUMENT IS PRIVATE AND COMPODITION AND IS SUPPLIED ON THE COPPRISS COMMITTED THAT OF THE POPESS ON COPING OR COMMITTED TO ANY CHICA POPESS ON WITHOUT TO BE USED FOR ANY PURPOSE ON COPING OR COMMITTED TO ANY CHICA POPESS ON WITHOUT COMPANY AND ART ARE ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND ART ARE ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND ART ARE ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND ART ARE ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND ART ARE ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND ART ARE ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND AREA ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND AREA ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND AREA ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND AREA ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND AREA ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND AREA ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND AREA ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY AND AREA ASSOCIATED TO ANY CHICA POPESS ON WITHOUT COMPANY ASSOCIATED TO ANY CHICA POPESS ON THE POPES		



DRAWING NO.	TITLE	REV. A	DART AEROSPACE LTD	D.E.O. NO.	SHEET NO. S	CALE
	CROSSTUB	E ASS'Y (206L MID FWD)	ENGINEERING ORDER	D206-667-147-A-1	SHEET 1 OF 1	NTS
DRAWN 4	7	CHECKED ASS	MFG. APPR.	APPROVED (M)	DE APPR.	
DATE 11.07	.15	DATE 11.07.20	DATE 1107.21	DATE 11/07/21	DATE 11.07.21	

**PURPOSE:** 

REPLACE MAGNOBOND WITH PROSEAL.

44049

### **CHANGE:**

IS:

ltem	Item Qty Part Number -147		Description		
9	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2		

#### WAS:

9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023
i i			ADHESIVE (TEXTRON/BELL SPEC. 299-947-100,
			TYPE II, CLASS 2 ADHESIVE)

NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

#### IS:

- 12) TO INSTALL D2891-1 SUPPORT: ABRADE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

#### WAS:

- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.



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# **DART SERVICE INSTRUCTION**

TO AMEND INSTRUCTIONS FOR CONTINUOUS AIRWORTHINESS ICA-D206-667 Rev. 3 OR LATER

REF. CANADIAN STC: SH01-5 REF. FAA STC: SR01304NY REF. EASA STC: EASA.IM.R.S.01179

## **PURPOSE:**

The supports on the following crosstubes are now installed using Proseal instead of Magnobond:

D206-667-101 @ CHG 004 D206-667-103 @ CHG 005 D206-667-107 @ CHG 002 D206-667-201 @ CHG 004 D206-667-203 @ CHG 004 D206-667-207 @ CHG 002 D407-667-105 @ CHG 004 A TROLLED COPY
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#### CHANGE:

For the crosstubes listed above, section 32.4 of ICA-D206-667 is amended as follows. Use Figures 32-4 to 32-8 of ICA-D206-667 for further reference. For crosstubes of an earlier change number, it is recommended that if the supports are removed, the supports should be reinstalled using the procedure listed below.

#### 32.4 SUPPORT INSTALLATION

- 32.4.1 Locate the area on crosstube for installation of support (ref. Figures 32-4 to 32-8 of ICA-D206-667). For D206-667-101/-103/-107/-201 and D407-667-105 crosstubes, the outward face of the support tabs should be 13.08" (332mm) from the crosstube center. For D206-667-203/-207 crosstubes, the outward face of the support tabs should be 10.03" (255mm) from the crosstube center. Ensure paint finish of crosstube is intact; touch up as required per Chapter 5 (5.3.9) of ICA-D206-667.
- 32.4.2 If present, remove any paint/primer on bottom of supports. Abrade mating surfaces of support and crosstube with 400-grit sandpaper. Saturate a clean cloth with MEK or 4105S Wash'n'Wipe Degreaser or equivalent and wipe until there is no residue.
- 32.4.3 Ensure a layer of 3M Scotch-Weld 2216 B/A Epoxy Adhesive is on the bottom of the support. If required, either apply or touch-up support to have a 0.03" to 0.05" thick layer of adhesive over the entire mating surface. Allow supports to cure for 24 hours.
- 32.4.4 Abrade mating surfaces of support (after cure) and crosstube with 180-grit sandpaper. Saturate a clean cloth with MEK or 4105S Wash'n'Wipe Degreaser or equivalent and wipe until there is no residue.
- 32.4.5 Apply a 0.04" to 0.07" thick layer of Proseal 890 Class B or AMS-S-8802 Class B sealant underneath applicable support and install support.
- 32.4.6 Install the clamps opposite to crosstube support as shown in Figures 32-4 to 32-8 of ICA-D206-667. Install rubber cushions underneath each clamp around the bottom circumference of the crosstube up to the crosstube centerline. Torque clamps 80-100 in lb (9.0-11.3 Nm). It is acceptable to use smaller or larger sized MS21920-XX clamps than those listed in ICA-D206-667, ensure that after torquing the clamps per this instruction, the nuts are in safety but not bottomed out
- 32.4.7 Prior to installing crosstube on aircraft, allow supports to cure for 72 hours and recheck torque on clamps.

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-0-01

APPROVED

BY:
D. SHEPHERD (DE # 02)

DATE:
11.07.20
CERT. NO.: SH01-5

ISSUE NO .:

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## LIQUID PENETRANT TEST REPORT

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ATTENTION LINDA / MAT.	ACUREN JOB NO. 188-12-C0309.
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HAWKESDUT, ON,	1 - 1 - 20
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ITEM(S) EXAMINED	$(\alpha)$
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JOB DESCRIPTION PROCEDURE NO. LT REV./DATE	2008 TECHNIQUE NO. LTAGUE 2008
PART NO. SEE CESCULTS	MATERIAL ALLE STEEL THICKNESS VALCES
SCOPE A WET FLOWERCEST LIQU	ID PENET NEW EXAMINATION WAS
CONTRECED ON THE SURFACE ONL	-Y 100%
TEST DETAILS	
METHOD FLUORESCENT USIBLE	✓ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED
FAMILY BRAND MACUA FLUX	BLACK LIGHT S/N /6459 ☐ OUTPUT > 1000 µ W/CM2 ☐ AMBIENT < 2 fc
PENETRANT 267 MINIMUM DWELL TIME 45 18 MIN.	LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT>100 fc @ SURFACE
PENETRANT REMOVER 1/20 MINIMUM DRY TIME >10 MIN.	OTHER LIGHT METER S/N /078866 CAL DUE DATE And 13/12
DEVELOPER TYPE NON AQUEOUS AQUEOUS DRY	LIGHT METER S/N 1078866 CAL DUE DATE AND 18/12.
TEST SURFACE	
SURFACE CONDITION AS GROUND AS WELDED	MACHINED SHOT BLASTED CLEAN BARE METAL
SURFACE TEMPERATURE - <- 4°C/ 20°F - 4°C/ 20°F to 10°C/50°	
RESULTS- ( METRIC MPERIAL)	
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1 - CLOSSTUBES - W. O. = 38044 /	
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# # # 84278 /	REGRED AD MEA FOR INDICATIONS
1 + 8 J562 /	
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Application of the contract of	
Scope of Services	
that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc.	r no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as
representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of	owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the the services referred to herein exceed the amount paid for such services.
Standard of Care In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under sim	ilar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or
implied, is made or intended by Acuren Group Inc.	
SIGNATURES	
CLIENT REPRESENTATIVE JUSSE White	DTR# E 4/565
TECHNICIAN (SIGNATURE):	REPORT
211-1101	REVIEWED BY:
NAME (PRINT): NAME INITIALS  ST TECHNICIAN 2 <sup>NO</sup> TECHNICIAN	
CGSB LEVEL CGSB LEVEL SNT LEVEL	
CGSB REG. NOCGSB REG. NO	